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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,292	03/12/2004	William H. Velke		6440

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CANADA

EXAMINER

COCKS, JOSIAH C

ART UNIT PAPER NUMBER

3749

DATE MAILED: 03/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/798,292	Applicant(s) VELKE, WILLIAM H.	
	Examiner Josiah Cocks	Art Unit 3749	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/26/2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 27-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 27-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Receipt of applicant's amendment filed 12/26/2004 is acknowledged.

Information Disclosure Statement

2. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the insulating material forming part of the heat exchanger assemblies and the heat storage material being formed as part of the heat exchanger assemblies (claims 28 and 40), and the heat transfer zones being operated from a source other than the combustion or exhaust gas vent area of the combustion mechanism (claims 31 and 43) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities:

On page 1, line 5 from the bottom the term "power" is misspelled.

On page 4, line 2, "affective" should be spelled "effective".

Appropriate correction is required.

Claim Rejections - 35 USC § 112, first paragraph

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

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The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 27-48 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. See MPEP § 2163.06.

The original disclosure does not provide support for an optimal air operating temperature level of between plus 50 and minus 25 degrees Fahrenheit (claims 27 and 39), the range of at least one of said heat transfer zones being related to the exhaust gas vent area of the combustion mechanism (claims 29 and 41), the range of at least one of said heat transfer zones being related to the combustion area of the combustion mechanism (claims 30 and 42), said heat transfer zones being operated from a source other than the combustion or exhaust gas vent area of the combustion mechanism (claims 31 and 43), the fuel being suspended coal dust or a coal dust slurry (claim 37), an insulating material being used to balance any temperature fluctuations occurring in the heat transfer zones (claim 40), and a means for the combustion mechanism to convert an oxidation mixture of fuel and air into high temperature, high velocity combustion products to operate a related energy transfer system (claim 46).

In regard to claims 31 and 43, independent claims 27 and 39 from which they depend require that the first heat transfer zone be related to the combustion mechanism. Claims 31 and 43 require the heat transfer zones to operate from a source other than the combustion or exhaust gas area of the combustion mechanism. The original disclosure does not provide support for a

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heat transfer zone related to the combustion mechanism but not the combustion or exhaust gas area of the combustion mechanism.

Claim Rejections - 35 USC § 112, second paragraph

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 27-48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In regard to claims 27 and 39, the phrase “and the like” in line 4 of each claim renders the claims indefinite because the claims include elements not actually disclosed (those encompassed by “and the like”), thereby rendering the scope of the claims unascertainable. See MPEP § 2173.05(d).

Further in regard to claims 27 and 39, the phrase “such as” in lines 4 and 6 of each claim renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

In regard to claim 46, it is unclear what structure in the specification provides the function of converting an oxidation mixture of fuel and air into high temperature, high velocity combustion products to operate a related energy transfer system.

Double Patenting

9. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

10. Claims 27-32 and 36-47 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 23-28, 31-40, 42, and 43 of copending Application No. 10/798,294. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

Since claims 27-32 and 36-47 of the present application and claims 23-28, 31-40, 42, and 43 of application 10/798,294 are drawn to the "same invention," the prohibition of double patenting rejections under 35 U.S.C. 121 does not apply. See MPEP § 804.01, example F.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 27, 29, 32, 33, 36, 38, 39, 41, 44-46, and 48 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 3,720,057 to Arenson (“Arenson”).

Arenson discloses in Figures 1-4 the invention described in applicant’s claims 27, 29, 32, 33, 36, 38, 39, 41, 44-46, and 48. In particular, in Figure 3 Arenson shows a process and device where a first exchanger assembly (116) extends through a first heat transfer zone related to the combustion mechanism and a second heat exchanger assembly (126) extending through a second heat transfer zone of the combustion mechanism. The fuel supplied through conduit (120) is heated at exchanger (116), which is heated by exhaust gases from a combustion mechanism conveyed through line (114). Air is conveyed through conduit (128) to the second heat exchanger (126). Example 2 (beginning in column 12) shows that natural gas leave heat exchanger (116) at a temperature of 168 degrees F and that air leaves heat exchanger (126) at a temperature of 40 degrees F. These specific examples fall within applicant’s claimed temperature ranges.

In regard to claims 33 and 46, in order for the combustion device (gas turbine engine 112) of Arenson to operate, there is necessarily some means for converting the oxidation mixture of fuel and air into high temperature, high velocity combustion products. Further, as shown in Figure 1, the exhaust products are used to heat a first heat exchanger (32) and an additional heat exchanger (46), which is considered to be a related energy transfer system.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 28, 30, 31,34, 35, 40, 42, 43, and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arenson as applied to the claims above and further in view of U.S. Patent No. 5,888,060 to Velke ("Velke")

Arenson discloses all the limitations of claims 28, 30, 31,34, 35, 40, 42, 43, and 47 except for an insulating or heat storage material forming part of the heat exchanger assemblies, one of the heat transfer zones being related to the combustion area of the combustion mechanism, and that the combustion mechanism is a furnace or process heater.

Velke teaches a device for pre-heating fluid flue to decrease its density and thus increase efficiency that is considered analogous prior art. In Velke, a heat storage material forms part of a heat exchanger assembly (see col. 4, lines 18-23) for the purpose of equalizing heat transfer from the heating zone to the heat exchanger during on/off cycles of the appliance. Velke also teaches the use of insulating material (21) in the heat exchanger shown in Figure 4 for the purpose of protecting against external heat loss. Velke also teaches that the heat transfer zone is operated from a source other than the combustion or exhaust gas vent area of the combustion mechanism in the case that access to such heat source locations is difficult (see col. 4, lines 16-18). Velke further teaches the use of a heat transfer zone being related to the combustion area of the

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combustion mechanism for the purpose of increasing efficiency of the appliance (see the abstract). The fuel employed is natural gas, propane gas, or other conventional fluid hydrocarbon fuel (see col. 3, lines 64-65). In regard to claims 34 and 35, the combustion device disclosed in Velke is a combustion appliance that may be a furnace or heating devices (see col. 4, lines 45-46 and col. 8, lines 45-51).

Therefore, in regard to claims 28, 30, 31, 34, 35, 40, 42, 43, and 47, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of Arenson: to incorporate the heat storage material and insulating material as taught by Velke to equalize heat transfer from the heating zone to the heat exchanger during on/off cycles of the appliance or to protect against external heat loss; to incorporate the heat transfer zone being operated from a source other than the combustion or exhaust gas vent area of the combustion mechanism as taught in Velke in the case that such heat source location is difficult to reach (see Velke, col. 4, lines 16-18); and to incorporate heat transfer zone being related to the combustion area of the combustion mechanism as taught by Velke for the purpose of increasing the efficiency of the appliance. Further, it would have been obvious to a person of ordinary skill in the art to substitute a process heater or furnace as taught in Velke for the gas engine of Arenson as these combustion devices are well known to produce an exhaust gas that may be used for heating a fuel feed. This substitution is based on the location and environment intended to receive the gas combustion appliance. For example, if the environment receiving the combustion device is a commercial, roof top then a process or space heater would be selected as the type of combustion device (see Velke, col. 9, lines 31-41).

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Josiah Cocks whose telephone number is (571) 272-4874. The examiner can normally be reached on weekdays from 8:00 AM to 5:30 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ira Lazarus, can be reached at (571) 272-4877. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://portal.uspto.gov/external/portal/pair>. Any questions on access to the Private PAIR system should be directed to the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

jcc
February 28, 2005



JOSIAH COCKS
PRIMARY EXAMINER
ART UNIT 3749